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Mother, Father, Teacher, and Peer Support and their Links with Adolescent Psychosocial Outcomes

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Dedication

To Stephen, who elucidated the power of love and importance of support.

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Mother, Father, Teacher, and Peer Support and their Links with Adolescent Psychosocial Outcomes

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Using data from a nationally representative study on adolescent health (Add Health), this study examined the direct and interrelated associations of emotional support from four key providers (mother, father, teacher, and peers) and adolescent psychosocial outcomes. These associations were examined at three time points, following participants from early adolescence to early adulthood. The study also explored how the influences of various support relationships change during the transition from early adolescence to early adulthood and how such changes affect outcomes. Support from mother, father, teacher and peers were linked to improvements in different domains of adolescent outcomes, with the exception of peer supports' link with increased delinquent behavior. The perceived support from the sources examined was also predictive of psychosocial functioning across time. This study also found fathers' perceived support to be predictive of more of the psychosocial domains examined than mothers, indicating that father support has more substantial influence than previously thought. Further, the positive associations among adolescent outcomes and teacher support were not found to be as domain-specific for adolescents as espoused in the literature. In addition, when multi-

group models were used to examine age differences in associations between perceived support and adolescent outcomes, middle adolescence appeared to be the period when adolescents are most receptive to all the support relationships examined. Adolescents' psychosocial functioning was also found to be predictive of different sources of perceived support.

Keywords: social support, father support, adolescence, early adulthood, Add Health

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Introduction

Adolescents who experience supportive environments, whether at home, at school, or in peer environments, experience better psychosocial development (Wight, Botticello & Aneshensel, 2006). Though researchers have consistently demonstrated the importance of quality relationships, whether with parents, teachers, or friends to healthy psychosocial development (Cohen & Wills, 1985; Masten, Juvonen & Spatzier, 2009; Sterrett, Jones, McKee & Kincaid, 2011), these positive relationships have largely been argued to each provide unique value to psychosocial development such that together they are an additive source of support, in large part because each relationship differs in the type of support it provides to an individual (Beam, Gil-Rivas, Chen & Greenberger, 2002). Expanding beyond the prior examinations of general associations between supportive relationships and psychosocial outcomes by examining the interrelations among key types of support (from mother, father, teacher, and peer) in predicting various adolescent psychosocial outcomes and whether their relative influence changes over time will enable a more meaningful understanding of the importance of support relationships. This nuanced exploration also includes examining associations by age and gender as these relations help provide insight into the developmental variations in support relationships. An understanding of these variations helps to identify how support relationships contribute to adaptive patterns of adolescent adjustment across time

Adolescence and Support

Adolescence is a critical period for social support as it is filled with a wide range of unfamiliar changes and transitions. Because adolescence straddles the period between childhood and adulthood, adolescents rely on the support of significant others to guide their development toward independence and autonomy (Larson, Wiley, & Branscomb, 2006). Failure to receive

such support leaves adolescents vulnerable to adjustment difficulties (Demaray & Malecki, 2002). Though relationships with parents, teachers, and friends are important throughout childhood, adolescents have greater autonomy than they did as children in actively determining the role each plays in their lives.

Research has highlighted the importance of support relationships to adolescent outcomes. Social support from parents, teachers, and friends has been associated with a range of behavioral and psychological problems, as well as positive development (Demaray & Malecki, 2002). Adolescents who receive parent support report lower levels of depression and anxiety and higher levels of self-esteem over time (Cornwell, 2003; Demaray, et al, 2005). Peer support has also been associated with less emotional and behavioral problems (Demaray & Malecki, 2002). Teacher support (e.g., encouragement and respect from teachers) is positively associated with multiple positive academic behaviors (Becker & Luthar, 2002; Murdock & Miller, 2003) and negatively associated with emotional and behavioral problems (Barber & Olsen; 2004). Though past research clearly indicates that parent, teacher, and peer support play a significant roles in reducing levels of emotional and behavioral problems and promoting positive development, few studies have concurrently examined their unique and combined associations with a range of adolescent psychosocial outcomes.

Determining which support relationship is most beneficial to adolescents has proven difficult. The current literature is inconclusive regarding the association between specific support relationships and adolescent outcomes; some studies have found that parent support is more beneficial to adolescent psychological and academic outcomes, while others have indicated that friend and teacher support are more beneficial to such outcomes during adolescence (Allen & Miga, 2010). The research is further complicated when the association between father and

mother support on adolescent outcomes are examined separately. Studies have found that mother support is more important to adolescent outcomes in general, but father support is more important for older adolescent males (Rueger, Chen, Jenkins, & Choe, 2014). These contradictions are likely a result of variation in the composition of the sample being studied and in the outcomes being examined. Further, few studies have investigated how these associations change over time, whether these changes are associated with change in adolescent adjustment, and the extent to which adolescent behavior influences the amount of support they receive. Some studies have shown that social support changes significantly over time (Cornwell, 2003), while others show that social support is a relatively stable construct (Malecki & Demaray, 2003). This study seeks to determine whether adolescents' support relationships and levels change over time, and how such changes affect their outcomes.

While researchers have found that social support has a consistently positive association with psychosocial outcomes, differentiating who is providing support and in what context has been less clear. Adolescents' social supports differ by a range of factors, with gender and age key among them (Wentzel, Battle, Russell, & Looney, 2010). Research has also shown that females receive both more and the same support as boys and that these associations by gender also vary by age (Harter, 1985; Helsen, Vollebergh, & Meeus, 2000).

The current study expands beyond the prior examinations of general associations between supportive relationships and psychosocial outcomes by examining the interrelations among four key types of support (from mother, father, teacher, and peer) in predicting adolescent psychosocial outcomes and whether their relative influence changes over time. Though associations have been established between specific relationships and psychosocial outcomes, studies examining the interrelations among support relationships are limited. The use of a

nationally representative sample allows a unique and novel opportunity to examine these relationships and their interactions among a sample of individuals with racial, ethnic, geographic and socioeconomic diversity. Such diversity also allows inclusion of a greater range of contextual factors that may suppress or enable these associations. The large sample size of the dataset to be used in this study allows for greater detection of small main effect and also increases the generalizability of any findings. This study expands the current literature by utilizing longitudinal modeling to explore the main and interactive effects of multiple support relationships as well as the reciprocal relations among these support relationships and adolescent psychosocial outcomes over time.

Social Support

Social support is the perception and actuality that one is cared for or has assistance available from other people (Thoits, 1995). Social support has been examined extensively and has consistently associated with a wide range of positive psychosocial outcomes (Cohen & Janicki-Deverts, 2009; Ertel, Glymour, & Berkman, 2009; Thoits, 1995; Umberson & Montez, 2010). Social support is a complex, multifaceted concept which can include emotional, informational, and instrumental assistance (Cohen & Wills, 1985). Emotional support includes empathy, caring, love, and concern, while informational and instrumental refers to the tangible support one actually receive (Thoits, 1995). This study confines its examination to emotional support from parents, teachers, and friends. Emotional support refers to displays of love, encouragement, caring and acceptance and is a consistent predictor of positive psychosocial outcomes (Shrout, Herman, & Bolger, 2006).

Perceived Support. Social support is usually measured in the form of actual and perceived support. Researchers have identified perceived support or ‘emotional support’ as the

subjective belief that one has a caring social network, and found that this belief is more strongly associated with psychosocial outcomes than actual provision of support (Turner & Brown, 2010). While perceived support has been a reliable indicator of positive outcomes, actual support acts have shown mixed effects (Uchino 2004, 2009). Perceived support has consistently been associated with positive psychosocial outcomes, including low rates of major depression and low psychological distress (Cohen & Wills, 1985). This may be due to the importance of the individual's perceptions of significant others' availability to provide social support as opposed to their actual provision of tangible support (Demaray & Malecki, 2002). Therefore, the current study will use measures of adolescents' perceived support.

Parental warmth is a necessary component of emotional support, as it refers to the degree to which parents are accepting and responsive to their children (Baumrind, 1967). However, parental warmth is usually objectively measured through observation or reports of specific behaviors. Emotional support though it shares similar components with parental warmth, refers to the child's subjective view of the relationship, even if it the specific group of behaviors associated with parental warmth is absent. Emotional support also differs from parental warmth in that parental warmth refers to general unconditional and positive regard while emotional support refers to the individuals' perception of the manifestation of this positive regard in the face of challenge.

Theories and Conceptualization

The ecological systems model proposed by Bronfenbrenner (1989) explains the role of multiple environments on an individual's development. He asserted that interactions with others and the environment are vital to an individual's psychosocial development. The individual exists within nested systems/contexts/influences that vary in proximity to the individual. According to

Bronfenbrenner (1989), when these systems are compatible, meaning they possess similar expectations and provisions that are geared towards achieving the goal, development is optimized.

Bronfenbrenner (1989) theorized that there are five environmental contexts that influence an individual's growth and development; the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem. The microsystem is the most proximal and influential. Family, peers, and teachers are each conceptualized as being within the microsystem, indicating equally relevant contexts. Though parents are the first source of influence, children's reliance on teachers and peers for mentoring and advice increases as they age into adolescence. Additionally, the theory not only emphasizes the influence of others on the individual but also how the individual contributes to the construction of these environments. Further, the mesosystem explains the interactions between the microsystems. The mesosystem could include experiences at home related to experiences at school, or experiences at school related to experiences at church. The chronosystem includes the transitions and shifts in an individual's lifetime. This may also involve the socio-historical contexts that influence a person. The influences of the latter two systems may be as important as those that measure the direct effects of influential relationships.

Though studies highlight the distinct and unique effects of parents, peers, and teachers on a range of psychosocial outcomes (Cook, Herman, Phillips, & Settersten, 2002; Demaray & Malecki, 2002), understanding how these relationships are interrelated (mesosystem) or change over time (chronosystem) is as important. Examining these relationships separately does not adequately capture the overall level of support the adolescent experiences nor does it illuminate the complex nature of the multiple significant relationships the individual has and how they

interact to contribute to development. The ecological model espouses a more contextual understanding of development and support relationships. This study examined support from multiple sources and contexts, as suggested by ecological systems models (Bronfenbrenner, 2005; Levitt, 2005).

The social convoy model (Khan & Antonucci, 1980) provides an overview of the wide range of social support that an individual experiences and the variety of individuals needed to provide such support. The range of challenges experienced throughout the lifespan necessitates a range of support relationships. However, the convoy model differentiates between social networks and social support. Social networks refer to affiliation with others, namely family member, friend etc. Social support describes the exchange between members of the individual's network and the individual. Further, the convoy model highlights the dynamic nature of social networks and the amount of support they provide.

Similar to Bronfenbrenner's model of ecology, the convoy model proposes that individuals are embedded within a network of individuals, delineated by multiple concentric circles, who provide varying levels of support depending on their closeness to the individual. The theory also proposes that certain areas in the network may shrink or expand depending on the needs of the individual. Changes in the network and the individual are then explored to determine the importance of particular support relationships. The changes and transitions associated with adolescence (Crosnoe, 2000; Furman & Buhrmester, 1992) make the convoy model particularly relevant as it provides a conceptual base from which to understand how support relationships shift over time and with development.

During adolescence, network relationships change. Peer and other non-parental relationships increase in quality and quantity, while parent relations remain fairly stable (Furman

& Buhmester, 1992), expanding the adolescent's network. However, little is known about the effect of such an expansion on adolescents' outcomes. The convoy model provides a way to conceptualize adolescent support relationships and the developmental changes which occur. The model suggests that though an expanded network does not guarantee more positive psychosocial outcomes, its existence creates a greater likelihood of support. However, networks do not always function for the benefit of the individual. Multiple networks may create situations of conflict or inhibit independence or autonomy for the adolescent. Primary support relationships may serve as "gatekeepers" to the development of additional support relationships, inhibiting or encouraging the development of additional relationships.

Whether primary support relationships inhibit or encourage the development of additional support relationships may be a product of the quality of the parent child relationship, specifically whether or not the child has a secure relationship with their primary support relationship. Attachment theory purports that the primary caregiver relationship extends to all other relationships (Bowlby, 1982). This theory may explain why parent support has been linked to interpersonal competence and self-worth, which are associated with the development of other relationships (Rubin et al., 2004). The support provided in the primary care relationship encourages the development of adaptive interpersonal skills which contributes to the development of future supportive relationships. These associations suggest bidirectional relations that may only be identified with the use of longitudinal data.

How Does Social Support Help Adolescents?

While the ecological models explain who provides support, conceptualizations of how support affects individuals' psychosocial outcomes has centered on two routes, the main- or direct-effect model and the buffering model. The main- or direct-effect model theorizes that supportive relationships provide individuals with regular positive experiences and stable, socially rewarding roles that promote positive outcomes (Cohen & Wills, 1985). Supportive relationships provide individuals with validation and a positive sense of self which, in turn, bolster self-esteem, confidence, and efficacy, factors which have been associated with a range of positive psychosocial outcomes (Stice, Ragan, & Randall, 2004). The associations between support relationships and psychosocial outcomes are positive regardless of the contextual stressors experienced by the individual. Supportive relationships would therefore be beneficial to individuals during times of both stress and ease. From a main effect perspective, adolescents would benefit from multiple sources of support regardless of contextual challenges.

The buffering model theorizes that social support protects an individual from the effects of a stressful circumstance. This means that the effects of support relationship are contingent on the experience of a stressful circumstance. Unlike the main effect model that proposes that support relationships have a positive effect on individuals irrespective of individual circumstance, the buffering model proposes that the positive effects of support relationships are only experienced when an individual faces stressful events. Though psychological problems are not synonymous with adolescence, the period may be particularly sensitive to environmental stressors. Puberty and school transitions are associated with stress and anxiety for adolescents (Crosnoe, 2000; Furman & Buhrmester, 1992). Supportive relationships, especially within the school environment, are particularly beneficial during adolescence as they help minimize stress reactions and improving the adolescent's feelings of efficacy (Cohen & Wills, 1985).

Measurement of Support

Both the main- or direct-effect model and the stress buffering model theorize a link between enacted support and psychosocial outcomes. However, perceived support has consistently been found to be a more reliable indicator of psychosocial outcomes (Uchino 2004, 2009). A meta-analysis indicated a tenfold difference in the proportion of variance explained by perceived versus enacted support (Finch, Okun, Pool, & Ruehlman, 1999). The association between perceived support and enacted support has also been found to be low (Haber, Cohen, Lucas, & Baltes, 2007), negating the notion that the link between perceived support and psychosocial outcomes can be explained by enacted support. Further, Gleason and colleagues (2008) found enacted support was associated with worse rather than better outcomes. Therefore, perceived support is a better predictor of psychosocial outcomes than actual support. Though these comparisons have been conducted primarily with adults, adolescents' perception of social support has also been identified as a more meaningful indicator of psychosocial outcomes (Costello, Pickens, & Fenton, 2001).

Typical measures of perceived social support, such as The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) and the Perceived Support Scale (Krause & Borawski-Clark, 1995), contain multiple items similar to those used in this study. The following are examples of the scale items and the matched study items: "I have a special person who is a real source of comfort to me"- "How close do you feel with your mom/dad?" (Study item); "Listened to you talk about private feelings" & "I can talk about my problems with my family" - "When you do something wrong, does your mom/dad talk to you to understand?" (Study item); "There is a special person in my life who cares about my feelings"- "How much do you feel your teachers care about you?" (Study item); "Others are critical of you

and things you do"- "how often have you had trouble getting along with your teachers?" (Study item). Though the study is limited to the existing questions in the dataset being used, the existing items are felt to be close approximates to items used on reliable measures of the perceived social support construct.

Support Relationships

Though both parents and peers are key influences in an adolescent's life (Elkington, Baumeister, & Zimmerman, 2010), it is commonly held that the main sphere of influence shifts from parents to peers across adolescence (Bronfenbrenner, 1986; Catalano & Hawkins, 1996; Erikson, 1968). Adolescence is a period in which independence and autonomy are sought and thus many adolescents begin to withdraw from parents (Crosnoe, 2000). However, despite the common assumption of the dominance of peer influence in adolescence, researchers examining the potential influence of peers and parents have found conflicting results. Some studies have found that parents' influence wanes in adolescence, often displaced by friends (Crosnoe, 2000), while others have found that peer and parent influences are equally important (Van Ryzin, Fosco, & Dishion, 2012). These varied results indicate the need for additional research.

Parent Support

Determining the role of parent support in adolescent development is especially important given the range of parenting characteristics that have been associated with child psychosocial outcomes (Eccles & Roeser, 2004). However, studies have emphasized the effect of negative parenting practices (Lansford, Criss, Petit, Dodge, & Bates, 2003). Though particular parenting behaviors such as limit setting, monitoring, and the imposition of consequences are all important to adolescent outcomes (Allen, Hauser, O'Connor, & Bell, 2002), the adolescent's perception of the quality of parent-child relationships and its association with adolescent psychological

functioning is as important. Adolescents and young adults who lack parental support are more likely to disengage from school and to experience lower academic achievement (Crosnoe & Elder, 2004). Supportive parental relationships are associated with lower depression and higher self-esteem (Colarossi & Eccles, 2003; Rueger, Malecki, & Demaray, 2008). Parent support has also been associated with lower aggression and conduct problems (Rueger, Malecki & Demaray, 2008).

Though support from both parents has been associated with adolescent outcomes, support from mothers has consistently been identified as particularly important to a range of adolescent outcomes (Colarossi & Eccles, 2003), especially when compared to fathers and teachers (Rueger et al, 2014).

Teacher Support

Most studies of adolescent support have focused on parent and friend support. However, when teacher support has been examined, positive associations have consistently been found for a wide range of outcomes (Woolley, Kol, & Bowen, 2009). Researchers have indicated that because children spend much of their time with peers and teachers, both influence their development (Eccles & Roeser, 2003). However, teachers provide a distinct and unique influence on psychosocial outcomes (Cook, Herman, Phillips, & Settersten, 2002; Demaray & Malecki, 2002). Though teacher support is commonly associated with academic functioning (Crosnoe, Elder, & Johnson, 2004; Kalil & Ziol-Guest, 2008), it has also been associated with nonacademic psychosocial outcomes (Colarossi & Eccles, 2003; Woolley et al., 2009). Teacher support is associated with lower levels of behavioral problems at school, such as cutting class, getting in physical fights, and being suspended from school. Support from teachers also predicted lower levels of depression and higher self-esteem among adolescents a year later

(Colarossi & Eccles, 2003). Though teachers have consistently been found to provide the lowest level of support, teacher support has been found to enhance and extend the influence of parent support (Levitt, 2005). Muller (2001) found that teachers can protect against the academic problems associated with family disadvantages. In addition, teacher support buffers against parent-child problems in nonacademic ways. Despite these associations, teacher support is rarely examined in conjunction with parent and friend support. Thus, this study examined the association between a range of psychosocial outcomes and teacher support in adolescence and young adulthood.

Peer Support

Research examining the relationship between adolescent outcomes and their peer relationships has focused primarily on negative peer influences and behaviors (Jaccard, Blanton, & Dodge, 2005). However, during this period peer relationships not only increase in number but become more stable, meaningful, supportive and, as a result, influential (Steinberg & Monahan, 2007). As such, higher levels of behavioral and psychological problems have been associated with lower levels of perceived warmth in peer relationships (Stocker, 1994). Additionally, poor quality peer relationships have been associated with lower school involvement and academic achievement (Berndt & Keefe, 1995). Conversely, friend support has been found to facilitate psychological adjustment, specifically lower depression and higher self-esteem (Colarossi & Eccles, 2003). However, DuBois and colleagues (2002) found that adolescents who received more social support from peers than adults have higher levels and rates of growth of behavior problems.

Interrelated Relationships

Longstanding models of support, such as attachment theory, would argue that the primary relationships extend to all other relationships (Bowlby, 1982). Therefore, the primary support relationship with mother or father would be predictive of teacher and friend relationships. Recent studies have provided support for this strict conceptualization. In an examination of the association between peer/parent support and depression, the influence of adolescent support was positive for adolescents with strong parental support, however the inverse was true when parental support was weak (Young, Berenson, Cohen, & Garcia, 2005). However, some researchers argue that support from parents, teachers, and peers are unique and distinct (Demaray & Malecki, 2002; Helsen et al. 2000), and that one support relationship cannot compensate for the absence of another (Van Beest & Baerveldt, 1999). Others argue that one support relationship protects against a lack of support in another relationship (Crosnoe, 2000).

Studies examining social support usually adopt either an additive or a multiplicative model to aid in understanding how these relationships affect outcomes. The additive model makes an assumption of joint influence of each support relationship. Therefore, according to the additive model, the influence of each support relationship is independent of that of another relationship. Using the additive model, support from the primary care relationship would not influence the support perceived in other relationships, nor would support from one relationship buffer against the lack of support in another. A multiplicative model allows for greater insight into the complex, interdependent relationships that exist. With the underlying assumption being that the combined influence of individual support relationships is greater than simply adding the influence of each support relationship, the multiplicative model accounts for compensatory influence of other forms of support. Though the positive influence of support relationships have

been established, the nature of their interactive effect is still unclear. This study sought to determine whether the influence of multiple support relationships is greater than the sum of their individual parts. This analysis of the interactive effects is a more valid way to determine the relationship between perceived social support and adolescent outcomes, especially given the potential for differential effects of mother, father, teacher and friend support.

Testing for interactive effects also takes into account the various combinations of relationships that may contribute to positive adolescent outcomes. Given that studies examining multiple support relationships concurrently are limited, taking an interactive approach allows an examination of whether the relations between the support relationships and psychosocial outcomes of interest follow the theoretical principle of multifinality or equifinality (Cicchetti & Rogosch, 1996). This theoretical approach takes into account the dynamic nature of human relationships and the multiple paths that may, or may not, be taken to get to a common end. By examining the interactions of multiple support relationships, the diversity of pathways to a common outcome is also explored.

Change in Support

The conceptualization of equifinality vs. multifinality also provides insight into how change in support may eventually affect adolescent outcomes. Equifinality refers to the assumption that various pathways may lead to a common outcome, while multiplicity refers to how initial common pathways may diverge based on subsequent changes (Cicchetti & Rogosch, 1996). Simply put, according to equifinality, variations in perceived support will prove predictive of the same psychosocial outcomes. Conversely, multifinality purports that change in perceived support will lead to distinct outcomes. The current study examined which of these theories best explains the inevitable change process that occurs in adolescence.

Adolescence is a period beset with changes and transitions, and such change motivates fluctuations in the social networks of the adolescent/young adult undergoes (Kahn & Antonucci, 1980), such that, as adolescents mature, their main source of influence and support shifts from within the home to outside the home (Crosnoe, 2000). Proponents of the convoy model describe social networks as dynamic and evolving as individuals experience developmental changes (Kahn & Antonucci, 1980). The needs of individuals change with each developmental stage, and the support relationships change to meet those evolving needs.

During middle adolescence, individuals report less parent support than during early adolescence (Furman & Buhrmester, 1992). This is likely a product of greater independence from parents (Collins & Laursen, 2004), as the number and importance of peer and other support relationships increase (Scholte & Van Aken, 2006; Del Valle, Bravo, & Lopez, 2010). This shift in sphere of influence is due to friendship orientation peaking in mid-adolescence, when puberty and school transitions heighten social anxiety (Crosnoe, 2000; Hensen et al., 2000). However, friends' influence has been found to decline as adolescents mature (late adolescence/early adulthood) and grow dissatisfied with conformity (Brown, Classen, & Eicher 1986). Researchers disagree on whether friend support gets greater than parent support (Furman & Buhrmester, 1992) or whether friend and parent support end up equally influential (Helsen et al., 2000). Similarly, though not as widely studied, inconsistent results have been reported when change in teacher support is examined. Teacher support was reported as the least influential (Furman & Buhrmester, 1992) and to decrease over time (Malecki & Demaray, 2002), as well as equally influential as parent support (Harter, 1996), when compared to other support relationships. This study seeks to examine the degree to which the associations between support relationships and adolescents vary across the high school years and the transition to adulthood.

Gender Differences

In addition to these age-related developmental shifts, some gender differences have been found. Research has shown that females report greater friend support than males do, though both males and females report the same amount of parent support (Helsen et al., 2000). These differences were amplified by age differences, such that males reported a decline in parent support and increase in friend support between the ages of 12 to 17 years. However, both parent and friend support remained stable after the age of 17 years. On the other hand, females reported a decreased in parent support between the ages of 12 to 14, after which it remained stable, while friend support increased from 12 to 17 years, then decreased slightly and remained stable from the age of 18 onwards. In addition, friend support exceeded parent support for females 15 to 17 years old. This shift is probably due to the greater emphasis females place on interpersonal relationships and their tendency to develop stronger emotional ties (Crosnoe, 2000). Crosnoe (2000) argues that this may cause them to develop other support relationships when one declines. This argument is supported by multiple studies demonstrating that females report more teacher and peer support than do boys (Bokhorst, Sunter, & Westenberg, 2010; Wentzel, Battle, Russell, & Looney, 2010). In addition, older adolescent females have been found to experience greater and more widespread benefits from mothers' support (Colarossi & Eccles, 2003). In general, the support received from parents and teachers have been found to be equally protective of females and males (Reuger et al., 2014).

However, despite receiving more support from a range of support relationships, females experience higher levels of depression and lower self-esteem than males (Nolen-Hoeksema & Girgus, 1994). The adolescent developmental shift from parent to other support relationships may come at a cost for females. Their increase in dependence on peers for feelings of self-worth

and esteem (emotional support) may make females especially vulnerable to psychosocial difficulties due to the critical nature of peer relationships (Calvete & Cardenoso, 2005). However, few studies have examined gender differences in how support relationships change and affect various psychosocial outcomes, and the interactive nature of support relationships across time.

Cyclical Relations

According to the transactional perspective, individuals influence their environments which in turn influence their own development (Sameroff, 1995; Petit, Laird, Dodge, Bates, & Criss, 2001). For example, individuals with depression often withdraw from social interactions which in turn limit others interaction with them and reinforce their feelings of loneliness. Even when depressed individuals do not withdraw, they often demand reassurance from others to substantiate their sense of self-worth and verify that others care about them (Joiner & Metalsky, 2001). Such continuous demand may cause others to avoid interacting with them. Similar dynamics may unfold through adolescents' behaviors and provisions of support. Therefore, adolescent behaviors are likely to change the support relationships they experience over time.

Study Aims

Though the associations of positive relationships and a wide range of outcomes have been well established, less is known about how these relationships interact and affect each other over time (Sterrett, Jones, McKee & Kincaid, 2011). As shown in Figure 1, the current study examines how psychosocial outcomes are associated with adolescents' perceptions of support relationships and whether different support relationships explain particular psychosocial outcomes. In addition, the longitudinal nature of the data allowed the examination of support relationships to be expanded beyond the concurrent findings in the current literature.

Associations will not only be explored within each time point, but also across time and including the interrelated and reciprocal associations among support relationships (see Figure 2).

Main Effects

Based on prior associations, it was expected that main associations between each type of support are specific to outcome. Though research has indicated the importance of social support to a wide range of outcomes, different sources of support are more commonly associated with certain outcomes than others. Parental support is associated with the health and well-being of both adolescents and young adults (Helsen et al. 2000; Wills et al. 2004). Prior research has also highlighted the association between peer relationships and behavioral outcomes. Similarly, the relations between teacher support and a wide range of academic adjustment behaviors have consistently been established (Crosnoe, 2004; Kalil & Ziol-Guest, 2008). However, studies have found that all support relationships promote overall well-being and better psychosocial outcomes.

Given that studies examining multiple support relationships concurrently are limited, this study examined whether the relations between the support relationships and psychosocial outcomes of interest follow the theoretical principle of multifinality or equifinality (Cicchetti & Rogosch, 1996). Do all types of support lead to the same good outcomes (equifinality) or do they differentiate to distinct outcomes (multifinality)? These associations first examined within time at Wave 1 and 2 (see Figure 1) and later over time (see RQ4 below). The following research questions were addressed:

RQ1a: Will adolescents with higher levels of support from parents experience lower levels of depressive symptoms and higher levels of self-esteem throughout adolescent and young adulthood? In light of the literature indicating the positive effect of social

support from both parents, it was expected that high levels of support from both parents would be associated with lower levels of depressive symptoms and higher levels self-esteem.

RQ1b: Will teacher support have a positive relationship only with academic achievement at each time point, or will it generalize to other outcomes as well? Given that teacher support is commonly associated with academic outcomes, it was argued that their positive association would be unique to adolescent academic achievement.

RQ1c: Will peer support be predictive of all psychosocial outcomes or just delinquency? In view of the extant research detailing the negative associations between peer support and adolescent outcomes, peer support is expected to be predictive of delinquent behavior.

Interaction Effects

This study also seeks to determine whether multiple support relationships have an effect greater than the sum of their individual contributions. Though associations between these support relationships have been established, the interplay among such relationships and their cumulative effect on psychosocial outcomes of adolescents provides important insight into their adjustment process. Studies examining the associations between psychosocial outcomes and interactions among support from parents, teachers, and peers would help guide more effective and pointed interventions.

Some models of support, such as attachment theory, would indicate that perceptions of multiple forms of support are a mere generalization of the primary attachment relationship (Bowlby, 1982). Therefore, if adolescents have high levels of support in their primary relationships, it is likely that they will perceive similar high levels of support in other significant

relationships, and vice versa. However, other research suggests that teacher and friend support make distinct and unique contributions to adolescent adjustment (Crosnoe & Elder, 2004). The argument for generalization vs. distinct relationship is further complicated when the role of both parent supports are examined in conjunction with teacher and peer support. Using the ecological perspective as a guide, this study will analyze the interactive effects, which are often more informative than main effects (Bronfenbrenner, 1977).

RQ2a: What are the interactive effects of parent, peer and teacher supports on adolescent outcomes? In examining interactive effects, the evidence seems inconclusive or scarce. As such, the aim was to explore these effects.

Developmental Timing

It is also important to examine which support relationship is most beneficial at different points of development. Given the shift in autonomy and independence during the child's life course, it is expected that outcomes in early adolescence would be more dependent on the quality of their parent and teacher relationship. However, as they age, peer relationships become increasingly important (Steinberg & Monahan, 2007), to the point at which they may supersede the effect of parent and teacher relationships. For these reasons, at each wave, direct and interactive effects were examined by stage of development (e.g., early, middle and late adolescence). Given the range of ages sampled at Wave 1, the sample was divided into early (11 to 13 years), middle (14 to 16 years), and late (17 years and older) adolescence. Multi-group models were run to see if the relations between types of support and youth outcomes vary by age. This approach was repeated for Wave 2, although there were fewer children in the early adolescent and middle adolescent groups as some will have aged into the next group. This approach has the most potential of capturing the differential effects of parent, teacher and friend

support, as well as the interactive effects of all three support relationships and their effect on psychosocial outcomes were examined. The following research questions were examined:

RQ3a: Is parental support more predictive of outcomes among early adolescents than among older adolescents? It is expected that compared with older adolescents, parental support were more predictive of the psychosocial outcomes of younger adolescents.

RQ3b: Is peer support more predictive of outcomes among older adolescents than among early adolescents? Conversely, it is expected that compared with early adolescents, peer support were more predictive of the psychosocial outcomes of older adolescents.

RQ3c: Does the strength of the association of teacher support with adolescent outcomes vary by age of the adolescent? The evidence provided by the literature seems to be inconclusive or scarce, so the aim was to explore the associations between teacher support and various psychosocial outcomes with different age groups.

Change Effects

Research indicates that the influence of support relationships and the adjustment difficulties experienced shifts as the adolescents ages (Crosnoe, 2000). These changes may leave adolescents vulnerable to poor psychosocial outcomes. Though social support is considered a relatively stable construct (Demaray & Malecki, 2003), when change in support has been examined researchers are conflicted as to its relation to outcomes. Some studies have found that any change in support increases the likelihood of psychosocial difficulties (Cornwell, 2003), while other studies have found a growth in support improves overall functioning (DuBois, Holloway, Valentine, & Cooper, 2002). Given the conflicting findings concerning the effect of

change in support, this study seeks to determine the degree to which change in support affects adolescents' outcomes by asking the following questions:

RQ4a: Does support at Wave 1 predict changes in outcomes, over and above initial levels of outcomes at Wave 1? Given the consistent positive associations found between perceived support and adolescent outcomes, higher support levels at Wave 1 were expected to be predictive of improvements in adolescent outcomes, over and above levels at Wave 1.

RQ4b: Does change in support predict change in outcome to Wave 3? The conflicting literature on the effect of change in support made it difficult to develop a hypothesis. As such, the aim was to explore whether change brings about difficulties or if improvements in support will positively affect outcomes.

Bidirectional Effects

Consistent with the transactional perspective of development that has emphasized the dynamic interplay of the individual and the contexts within which they exist, this study will examine how adolescents affect the relationships that affect them (see Figure 2). Reciprocal influences between adolescents and their support relationships lead to bidirectional relationships across time which affects future adolescent psychosocial outcomes (Sameroff, 1995). As such, the following question was addressed:

RQ5a: Do adolescents' psychosocial outcomes at Wave 1 predict change in support at Wave 2? It is expected that adolescent outcomes at Wave 1 will affect the level of support they receive at Wave 2.

Moderation by Demographic Characteristics

Though much can be gained from examining the relations between support relationships and adolescent outcomes, adolescents and those who offer them support exist within multiple contexts that affect these. A more in-depth understanding can be gained from also examining how these associations are influenced by the contexts within they exist. As such, models were examined for differences by age and gender.

Method

Procedure

Data for this study was drawn from the restricted-use sample of the National Longitudinal Study of Adolescent Health dataset (Add Health), a nationally representative, longitudinal, school-based survey of health-related behaviors among adolescents from grades 7 to 12 who were followed into adulthood (Harris et al., 2009). To date, information has been collected from four time points, spanning 14 years.

Wave 1 data collection began in 1994 as a school-level study. All students enrolled in 132 schools were asked to complete a self-report questionnaire during class. More than 90,000 students responded and of these participants, a subsample of 20,745 was asked to complete a more in- depth follow-up interview in their home (i.e., Wave 1 in-home survey). These in-home surveys were confidential and aimed at collecting more detailed information than that of the in-school questionnaires. Wave 1 collected data about family context, school context, peer networks, and spatial networks. Information about adolescents' personal relationships with family and friends, their experiences, and their involvement in various activities including crime and delinquency during the past year were sought. Adolescents were almost always interviewed in their homes, but if not, another private setting convenient to them was used for the interview. These interviews were conducted using lap-top computers. Interviewers read questions aloud to participants, who then responded verbally. For sensitive questions (e.g., sexual preferences), participants listened via earphones and used the computer to enter their own responses. Primary caregivers of Wave 1participants were also interviewed. They were asked to respond to a range of questions querying their neighborhood quality to parent-child relationship quality. During

Wave I, adolescents were between 11 and 21 years of age. Slightly more than half of all participants were female (n = 10,480).

In addition, during Wave 1, approximately 85 percent of the parents, usually a mother, of participating adolescents completed a caregiver interview. Of the 20,745 adolescents, 17,700 of their primary caregivers completed the Wave 1 in-home component (Harris et al., 2003). The parent questionnaire gathered data on parent demographic information such as, family structure, education, employment, household income and economic assistance, and neighborhood characteristics.

Approximately one year later, a second round of in-home interviews was conducted. Adolescents who had graduated from high school were not re-interviewed, reducing the number of participants to 14,738. The Wave 2 questionnaire remained largely the same as Wave 1, with participants again being asked to report on their personal relationships and involvement in crime and delinquency. The age range for the participants was between 12 and 21 years at Wave 2.

Wave 3 data collection commenced roughly 6 years after Wave 2 interviews were completed, between August 2001 and August 2002. All participants interviewed at Wave 1 were eligible to be interviewed at Wave 3; 15,170 participants were interviewed, resulting in a 76% response rate. Participants ranged between 18 and 27 years of age at Wave 3. Data collected on health and health related behaviors were the same as that measured at earlier waves. However, some content of the Wave 3 survey changed to reflect more age-appropriate topics. For example, some questions no longer referred to offenses such as running away from home. Instead, the Wave 3 questionnaires asked participants to report on criminal behaviors more typical of adult offenders (e.g., deliberately writing bad checks). To ensure participant confidentiality, data were again recorded on laptop computers. Interviewers read the questions and entered participants'

responses, except when sensitive material was being sought. In such cases, participants listened to the questions via earphones and entered their own responses. Interviews lasted about 90 minutes and were mostly conducted in the participants' homes. Wave 3 respondents are representative of the same population as the Wave 1 sample when sampling weights are utilized (Harris et al., 2009).

Participants

In the complete Add Health sample, 20,745 (11–20 years, *M* = 15.9 years) adolescents completed surveys in Wave 1. This number was reduced to 14,738 when 12th graders were excluded from Wave 2 (12–21 years, *M* = 16.5 years). The number of participants increased in Wave 3 to 15, 197 (18–27 years, *M* = 22.3 years) as all Wave 1 respondents, regardless of Wave 2 participation, were sought for follow-up interviews.

However, the current study sample will only include adolescents who participated in all three waves of the Add Health study, reducing the sample to 11,621. The study sample of participants was 52% females and 67% Non-Hispanic Whites, 15% African Americans, 12% Hispanic, and 5% another race (e.g. Asian, Native American, or other). Most of the sample (86%) had parents who had a high-school diploma/GED or higher. More than half of the sample (57%) lived with both biological parents. Adolescents' mean age at Wave 1 was 14.93 years, at Wave 2 was 16.0 years, and at Wave 3 was 21.4 years.

Measures

Descriptive statistics for study variables and correlations among variables are included in Tables 1 and 2, respectively.

Parent Support. Adolescents were asked to report on the support they get from their parents, responding to questions once for their mothers and once for their fathers. A mother and

father perceived support scale was created using the following questions from Waves 1 and 2: "How close do you feel with your mom/dad?"; "How much does your mom/dad care about you?"; "Is your mom/dad warm and loving towards you?"; "When you do something wrong, does your mom/dad talk to you to understand?"; "Are you satisfied with your communication with mom/dad?"; "Are you satisfied with your relationship with mom/dad?" Scale scores were calculated separately for mother and father for both waves, and had good internal consistency, with alphas ranging from .86 to .95.

Teacher Support. A teacher support scale was created by averaging responses of the following items in Waves 1 and 2: "Since school started this year, how often have you had trouble getting along with your teachers?"; and "How much do you feel your teachers care about you?" The response categories for the first question ranged from "never" to "everyday", and the second question response categories were "not at all", "very little", "somewhat", "quite a bit", and "very much." Each question had five responses from which to choose. The first item was reverse-coded so that higher values indicate more support. The correlations between these two items were acceptable at both waves and stronger at the second wave (Wave 1 $r = .55$; Wave 2 $r = .80$; $p < .05$).

Friend Support. The measure of friend support was very limited in the Add Health data. The only question that assesses the support received from friends was, "Do you feel your friends care about you?" Response choices ranged from 1 (very much) to 5 (not at all). This item is available in Waves 1 and 2. Both items were reverse-coded so that higher values indicate greater support.

Psychosocial Outcomes

Psychosocial outcomes include both positive and negative outcomes, namely self-esteem, academic achievement, depressive symptoms, and delinquent behavior. These outcomes were assessed in multiple waves of the Add Health data collection.

Self-Esteem. Information was collected to determine adolescents' self-esteem using the Rosenberg Self-Esteem Scale (Rosenberg, 1989). Responses to four items (e.g., "You have many good qualities", and "You like yourself just the way you are") were used to measure adolescent self-esteem, based on a 5-point scale ranging from "strongly agree" to "strongly disagree". Self-esteem scores were calculated by averaging responses to the items; higher scores indicated higher self-esteem. Cronbach's alphas ranged from.80 for Wave 3 to .87 for Wave 1.

Academic Achievement. Adolescent achievement at Waves 1 and 2 was their overall grade point average (GPA). Participants were asked to report their grades "at the most recent grading period" in four subjects, English/Language Arts, Mathematics, History/Social Studies, and Science. Adolescents reports ranged from 1 (D/F) to 4 (A). The standard 4-point composite grade point average (GPA) was then calculated using an average across these four subjects at the first two waves. By Wave 3, however, all Add Health respondents are beyond high school age, and thus the Wave 3 measure is a measure of education attainment. Participants reported the highest year of school they completed, with reports ranging from 6 to 22 years. Although the Wave 3 measure is one of attainment, for simplicity I will refer to this set of variables collectively as "academic achievement".

Depressive symptoms. Depressive symptoms were assessed using items from the Centers for Epidemiological Studies- Depression Scale (CES-D; Radloff, 1977). Depressive symptoms were measured at all three waves using adolescents' responses to thirteen items from the CES-D,

asking how often they were “true during the past week”. Items included, “bothered by things”; “frequent crying”; “felt sad”; and “life not worth living”. Responses were scored on a 4-point scale, with 0 = never/rarely; 1 = sometimes; 2 = a lot of the time; and 3 = most/all of the time. Cronbach’s alphas for the depressive symptoms scale were .86 at Wave 1, .80 at Wave 2 and .83 at Wave 3.

Delinquent Behavior. Adolescents’ delinquent behaviors were assessed from self-reported participation in fifteen different delinquent activities during the past year. During Waves 1 and 2, delinquency included nine non-violent behaviors (e.g., painting graffiti, damaging property, and running away from home), and six violent behaviors (e.g., taking part in a group fight, hurting someone badly enough that the person required medical attention, and using a weapon to forcibly take something) (Barnes, Beaver & Miller, 2010). Responses were coded as 0 (never), 1 (once or twice), 2 (three or four times), or 3 (five or more times). To create the delinquency scale, responses to these variables were summed into a composite measure (Wave1α = .95; Wave 2 α =.94). See Table 2 for means, standard deviations, and ranges for each wave.

At Wave 3, participants had reached adulthood. As a result, many of the questions on the delinquency scale were changed to reflect criminal behaviors that are more common in adulthood. Participants responded to questions referring to involvement in fraud activity, such as deliberately writing bad checks and buying or selling stolen property. Wave 3 items can also be separated into nonviolent and violent criminal behaviors. Eight items pertain to nonviolent delinquency (e.g., breaking into a house, selling drugs, and buying stolen property), while four items referenced violent behaviors (carrying a weapon to school or work, using a weapon in a

fight, and taking part in a group fight). Again, the criminality scale was created by summing all scale items ($\alpha = .96$). Higher values indicate more criminal activity.

Covariates

All models controlled for a full set of demographic covariates collected at each wave including the participant's age, gender, and race/ethnicity. Gender was coded dichotomously (0 = female; 1 = male). To control for race, dummy-coded variables were developed for White, African American, and other race, using White as the reference or comparison group. Age was coded as a continuous variable measured in years.

Parent demographic information was collected at Wave 1 including education attained and family structure. Parent education was measured as less than high school degree, high school degree, some college, and college degree. Family structure was measured as single-mother household, stepfamily household, and nuclear family household. Adolescents reported number of people living in their households.

Results

Analytic Procedures

Analyses were conducted using Mplus 7.11 to allow the estimation of a series of structural equation models (SEMs) and multiple group analyses. Full information maximum likelihood (FIML) was used to reduce bias associated with missing data. FIML does not actually impute missing values but uses all the available information to provide a maximum likelihood estimation. FIML is a preferred method for generating reliable estimates, and produces less bias than list-wise deletion. In addition, Mplus allows for the incorporation of study weights to account for the potential bias caused by the oversampling subgroups and by differential attrition.

The Comparative Fit Index (CFI), the Root Mean Squared Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR) were used to assess model fit. Good fit is indicated by a CFI greater than .95, RMSEA less than .06 and SRMR less than .08 (Hu & Bentler, 1999). For adequate fit, a CFI greater than .89 but less than .95, and values for RMSEA and SRMR below .1 are considered acceptable (Barrett, 2006). Finally, Mplus accounts for issues of dependency in the data (e.g., students coming from the same school at Wave 1) by adjusting standard errors in the model estimators through the CLUSTER command. The estimation of standard errors is robust when such techniques are employed.

All analyses clustered adolescents by their sampled school and adjusted for sample weights according to the Add Health weighting guidelines (Chantala, 2006). Cross-sectional weights were used when both predictor and outcome variables are from the same wave. Longitudinal weights were used when the predictor or outcome variables are taken from multiple waves.

Moderation by gender and age of all research questions was assessed to determine if there were differential links between support relationships and adolescent outcomes.

Analyses for Research Question 1. Initial analyses examined the degree to which mother support, father support, teacher support, and peer support independently were linked with psychosocial outcomes of adolescents and young adults at each time point. Path models were then used to examine relations among mother support, father support, teacher support, peer support, and adolescent outcomes. Using path models allowed for estimates of within-time and across-time associations by accounting for covariances among variables. Models were built incrementally with each type of support (i.e., mother, father, teacher, and peer) entered separately as predictor variables of each psychosocial outcome variable. Throughout the models, each of the variables in the main model was regressed on all of the covariates. The extent to which relationships in the model were moderated by age was assessed by incrementally testing whether paths differ across age groups using the multi-group comparison approach for analyzing moderation in structural equation modeling (Bowen & Guo, 2012).

Analyses for Research Question 2. After the main associations between mother, father, teacher, and peer support and psychosocial outcomes were examined, the interactive effects between both parent support, teacher support, and peer support were also tested (i.e., mother support x father support, mother support x teacher support, mother support x peer support, mother support x teacher support x peer support, and mother support x father support x teacher support x peer support etc.). These interaction terms helped to determine whether the effect of each support relationship varies in association with either or both other support relationships. This method was used because comparative analysis of interaction effects between social contexts is an established way to operationalize an ecological conceptualization

(Bronfenbrenner, 1986). These interaction effects were also examined with the full sample and multi-group models by gender and grade.

Analyses for Research Question 3. Multi-group path models were then run to examine relations among mother support, father support, teacher support, peer support, and adolescent outcomes for early, middle, and late adolescents. Like the models for RQ1, each model was built incrementally with each type of support (i.e., mother, father, teacher, and peer) entered separately as predictor variables of each psychosocial outcome variable.

Analyses for Research Question 4. A major goal of RQ4 was to determine the developmental changes in support relationships. As such, the effect of social support on adolescents' psychosocial outcomes over time, using auto-regressive models, was estimated. The residual-change approach allowed modeling outcomes of interest at later waves while controlling for the level of that same variable at earlier waves. Further, whether differences exist between models with and without adjustment for baseline social support exist was also examined. Structural equation modeling examined both the current and cross-lagged paths between support relationships and psychosocial outcomes, and whether the concurrent and cross-lagged relations differ by gender and age (early, middle and late adolescence).

Analyses for Research Question 5. Lastly, this study examined the links between adolescent achievement and psychosocial behaviors may exert on future support relationships with parents, teachers and peers. SEM models were used to investigate bidirectional relations between support relationships and adolescent outcomes. These models tested the prediction of Wave 2 support relationships from Wave 1 psychosocial outcomes.

Descriptive Analyses

Descriptive statistics of the variables of interest are reported in Table 2. Results indicated that, at Wave 1, adolescents reported receiving the highest level of support from mothers (M = 4.41, SD = .64), followed by peers (M = 4.23, SD = .81), fathers (M = 4.21, SD = .77) and teachers (M = 4.14, SD = .77). Adolescents also reported high self-esteem (M = 4.07, SD = .64.), while their reported levels of behavioral problems (M = 1.29, SD = .35), and symptoms of depression were low (M = 1.59, SD = .40); the level of academic achievement reported was moderate (M = 2.83, SD = .74). The means for all the outcomes measured were relatively stable across the waves, except for teacher support, which show a large decrease from Wave 1 to Wave 2 (see Table 2). Correlations among the study variables are displayed in Table 3, and suggest support for the proposed associations.

Cross-Sectional Findings

After controlling for demographic and school characteristics, the degree to which parent support, teacher support, and peer support are associated with the psychosocial outcomes of adolescents and young adults within wave was examined. As highlighted in Table 4, Wave 1 results indicate that adolescents with higher levels of support from mothers experience fewer depressive symptoms (B = -.10, p < .001) and higher levels of self-esteem (B = .26, p < 001; B = .18, p < .001) during adolescence. However, though father support (B = .06, p < .001) was positively and significantly associated with academic achievement, mother support was not (B = -.01, p = .944). Surprisingly, peer support was not predictive of behavioral problems (B = .01, p = .211) or academic achievement (B = .02, p = .152), but was predictive of self-esteem (B = .08, p < .001) and depressive symptoms (B = -.04, p < .001) (see Figure 3).

Similar results were found when the relations among adolescents' support relationships and their psychosocial outcomes were examined at Wave 2. All four support relationships had a significant positive association with depressive symptoms and self-esteem (See Figure 4). However, mother (B = -.06, p < .001), father (B = -.03, p < .01) and teacher (B = -.10, p < .001) support were associated with fewer behavioral problems, while peer support (B = .02, p < .001) was associated with more problems (See Table 5). As in Wave 1, no significant mother support effect was found for academic achievement, though father (B = .07, p < .001) and teacher support (B = .26, p < .001) were associated with greater academic achievement.

Main Effects of Social Support on Adolescent Outcomes

When the effect of social support on adolescents' psychosocial outcomes over time was examined, all sources of support were associated with improvements in different domains of child outcomes from Wave 1 to Wave 2 (see Table 6). Mother support at Wave 1 was associated with increases in self-esteem (β = .05, p < .001) and decreases in behavior problems (β = -.04, p = .07) from Wave 1 to Wave 2. Father support was linked with increases in self-esteem (β = .04, p < .05) and academic achievement (β = .04, p < .05), and with fewer depressive symptoms (β = -.07, p < .001) from Wave 1 to Wave 2. Similarly, teacher support was predictive of increases in self-esteem (β= .05, p < .001) and academic achievement (β = .03, p < .05), but was associated with decreases in both depressive symptoms (β = -.05, p < .001) and behavior problems (β = -.06, p < .001). Peer support at Wave 1 was associated with increases in self-esteem (β = .04, p < .01) academic achievement (β= .03, p < .05), and decreases in behavior problems (β =.03, p < .01).

Change in the amount of social support adolescents received was also associated with improvements in psychosocial outcomes to Wave 3. Father support at Wave 2 was associated

with increases in self-esteem (β = .04, p < .05) and decreases in depressive symptoms (β= -.07, p < .01) from Wave 2 to Wave 3. Teacher support at Wave 2 was linked with increased self-esteem (β = .04, p < .05) academic achievement (β = .05, p < .001) and decreased behavior problems (β = -.08, p < .001). Surprisingly, peer support at Wave 2 was positively associated with improvements in academic achievement from Wave 2 to Wave 3 (β = .04, p < .001), but no significant association was found with any of the other outcomes examined. Even more surprising, a change in mother support was not significantly associated with any of the psychosocial outcomes examined.

Bidirectional Effects

The influence of adolescent outcomes on future support relationships with mother, father, teachers and peers were examined and results indicated that different domains of psychosocial functioning are linked with different sources of social support. Higher self-esteem at Wave 1 was associated with increased peer support (β = .03, p = .09), mother support (β = .04, p < .05) and teacher support (β = .05, p < .001) at Wave 2. However, greater academic achievement at Wave 1 was only associated with increased teacher support at Wave 2 (β = .10, p < .001). Depressive symptoms at Wave 1 was linked to decreased peer (β = -.07, p < .001) and father support (β = -.04, p < .05) at Wave 2. Adolescents' behavioral problems at Wave 1 were associated with decreased mother support (β = -.06, p < .001), father support (β = -.06, p < .001) and teacher support at (β = -.15, p < .001) at Wave 2.

Developmental Timing

These relationships were then examined using multi-group path models to determine whether the relations identified above differed by period of adolescence. The Satorra-Bentler scaled chi-square differences test was used to determine significant difference across groups. The

chi-square from a model with all parameters unequal across all groups was compared to the chi-square from a model with the loadings constrained to be equal across groups. The unconstrained model fit the data well X^2 (477, N = 8846) = 1959.78, p <.001, CFI =.95, RMSEA=.03, SRMR=.07. The difference between chi-square of the unconstrained and constrained multiple group model was X^2 = 666.68, and the difference in degrees of freedom was df = 228 (see Table 7). With p < .001, it can be concluded that the path estimates for early, middle and late adolescents are significantly different.

The associations between adolescent outcomes and the support relationships examined varied by age group. During early adolescence (11-13 years), peer support relationships had no significant association with any of the adolescent outcomes measured. Only mother and teacher support were predictive of adolescent outcomes at Wave 2. Mother support at Wave 1 was associated with increased self-esteem (β = .09, p < .001) and decreased depressive symptoms (β = -.07, p < .05) from Wave 1 to Wave 2. Teacher support was associated with increased self-esteem (β = .06, p < .05), decreased depressive symptoms (β = -.08, p < .01), and delinquent behaviors from Wave 1 to Wave 2 (β = -.07, p < .01), but not academic achievement. At Wave 2 father and teacher support were linked with various outcomes. Father support was predictive of increased educational achievement (β = .06, p < .05) and decreased depressive symptoms, while teacher support was predictive of increased self-esteem (β = .06, p < .01) and decreased delinquent behaviors (β = -.08, p < .001) from Wave 2 to Wave 3. Again, teacher support was not associated with academic achievement.

In middle adolescence (14-16 years), mother support was associated greater self-esteem (β = .05, p < .05) and higher academic achievement (β = .05, p < .05) from Wave 1 to Wave 2. Father support was linked to fewer depressive symptoms (β = -.08, p < .05), and teacher support

to greater self-esteem (β = .07, p < .01). Peer support was predictive of both an increase in self-esteem (β = .03, p < .05) and, a decrease in delinquent behaviors (β = .07, p < .001). When examining Wave 2 to Wave 3, father support was associated with a decrease in depressive symptoms (β = -.08, p < .01). Meanwhile, teacher support was linked with a decrease in delinquent behavior (β = -.08, p < .01) and an increase in academic achievement T3 (β = .07, p < .01). Peer support was associated with an increase in both self-esteem (β = .05, p < .05) and academic achievement (β = .05, p < .05).

Older adolescents' (17 years and older) psychosocial outcomes were scarcely associated with support relationships. At Wave 1, mother support was associated with delinquent behavior (β = -.11, p < .01) and father support was associated with greater self-esteem and lower delinquent behavior. Only peer support was associated with academic achievement (β = .05, p < .05) from Wave 2 to Wave 3.

Overall, the results indicate that mother support matters more at Wave 1 than Wave 2 at each developmental stage, while father support is significant at Wave 2 of early adolescence and both Waves at middle and older adolescence. Teacher support was not linked to any outcomes during older adolescence. However, peer support was more predictive of outcomes among middle and older adolescents than among early adolescents. None of the sources of support examined predict depressive symptoms in older adolescents, which suggests other factors not examined here are more important at that developmental stage.

Gender Differences

Multi-group models were also used to determine whether the associations identified the different sources of support and the psychosocial outcomes examined varied by gender. The Satorra-Bentler scaled chi-square differences test demonstrated that the unconstrained model fit

the data well X^2 (320, N = 8817) = 1939.63, p <.001, CFI=.94, RMSEA=.03, SRMR=.072. Thus, the relations among perceived support relationships and psychosocial outcomes are different for male and female adolescents. The difference between chi-square of the unconstrained and constrained multiple group model was X^2 = 4343.80, and the difference in degrees of freedom was df = 108, p <.001 (see Table 8). A few significant differences in the associations among sources of perceived social support and adolescent outcomes for males and females were identified. Mother support (β = .11, p < .001) and peer support (β = .04, p < .001) at Wave 1 predicted greater self-esteem at Wave 2 for males, while father support (β = .05, p < .001) and teacher support (β = .05, p < .001) was predictive of increases in self-esteem T1 to T2 for females. Only father support (β = .07, p < .05) at Wave 1 predicted academic achievement for males, but teacher support (β = .06, p < .05) predicted academic achievement for females. However, when the relations between change in support and outcomes were examined a shift in significant support relationships was identified. For males, an increase in teacher support (β = .11, p < .05) from Wave 1 to Wave 2 predicted higher academic achievement at Wave 3. On the other hand, father (β = .13, p < .05), teacher (β = .16, p < .05) and peer support (β = .09, p < .05) at Wave 2, predicted higher increases in academic achievement for females from Wave 2 to Wave 3. Also, females' self-esteem at Wave 2 was predicted by father (β = .04, p < .05) and teacher support (β = .03, p < .05) from Wave 2 to Wave 3. No significant associations were found between any support relationship at Wave 2 and male self-esteem. No other gender differences between sources of support and adolescents outcomes over time were found.

Interaction Effects

The next model examined whether there are interactive effects of mother, father, teacher and peer support on adolescent outcomes. It was felt that support from parents and teachers may

moderate the negative effect of peer support on behavior or have a cumulative effect on the other outcomes examined. However, this model did not fit the data well, X^2 (468, N = 8846) = 11891.98, p < .001, CFI = .64, RMSEA =.05, SRMR =.09, and thus no interaction terms can be interpreted.

Discussion

Perceived support relationships are important, and research has identified numerous outcomes positively affected by perceived care and warmth of others. However, few studies have examined these associations over time with multiple sources of support and outcomes. The current study explored the relations between mother, father, teacher, and peer perceived support and adolescents' psychosocial outcomes over time and how these relationships affect each other. Though most of the findings add credence to those of prior research highlighting the importance of social support and adolescent well-being, some challenge the common assumption in the literature of the waning influence of parents in lieu of peers and minimal influence of fathers. The current findings indicate that support from mother, father, teacher and peers are linked to improvements in different domains of adolescent outcomes, with the exception of peer supports' link with increased delinquent behavior. The perceived support from the sources examined was also predictive of psychosocial functioning across time. However, this study found fathers' perceived support to be predictive of more of the psychosocial domains examined than mothers, indicating that father support is more strongly linked with adolescent outcomes than previously thought. Further, the positive associations between adolescent outcomes and teacher support was not found to be as domain-specific for adolescents as espoused in the literature. In addition, when multi-group models were used to examine age differences in associations between perceived support and adolescent outcomes, middle adolescence appeared to be the period when there is an increase in the significant links between support relationships and adolescents adolescent outcomes. Adolescents' psychosocial functioning was also found to be predictive of different sources of perceived support.

This study first sought to explore associations between various sources of support and different domains of adolescents' psychosocial functioning at two different time points. Consistent with the literature, the results from this study showed that perceived social support from all relationships is positively associated with adolescent outcomes. However, quite surprisingly, results also indicated that while father support was associated with all the domains of adolescent outcomes examined, mother support largely was not. In addition, though the literature generally suggests that mother support is more strongly related to adolescents' outcomes (Colarossi & Eccles, 2003; Umberson, 1992), father support had a larger range of significant associations. The same was true for teacher support which had significant positive associations with all the psychosocial outcomes examined. Further, within Wave 1, peer support was only associated with the adolescent outcomes of self-esteem and depressive symptoms. Though mother and peer support were each linked to another outcome in Wave 2, father and teacher support maintained significant positive associations with all four of the outcomes examined. The associations between adolescent outcomes and the perceived social support domains were then explored across time and similar results were found; father and teacher support were consistently predictive of academic achievement, while mother support was not. This pattern of association was unexpected and contrary to my hypothesis that mother support would be broad, father minimal, and teacher and peer support domain specific. Though these findings do little to disentangle the inconsistency in the literature regarding mother and father differences, they do highlight the importance of father support, and of studying the effect of both father and mother support concurrently.

The narrower than expected links between mother support and adolescent outcomes may be a function of the type of support being measured. Researchers have argued that various forms

of support are unique in the association they have with specific outcomes (Song, Bong, Lee, & Kim, 2015). Perceived social support (emotional support) is argued to primarily affect psychological outcomes as opposed to student motivation or learning. Mothers fulfill a range of responsibilities, including setting limits and monitoring of behavior. Researchers have argued that these behaviors are sometimes perceived as parental pressure by adolescents (Song, et al, 2015). As the adolescent strives for autonomy and independence, fulfillment of these tasks may promote conflict in the mother-child relationship and affect the perceived emotional support received. If emotional support is affected, other forms of support (e.g. instrumental) may compensate and have a greater influence during adolescence. Examining multiple types of support may help to elucidate this.

The results of this study indicate that father support plays an important role, over and above mother support. This finding is surprising in light of the longstanding focus on mother support. However, it may indicate various processes at work. Namely, that the strengthening of the father-child relationship is an indication of the adolescents' expanding network or, according to the convoy model (Khan & Antonucci, 1980), utilization of an already existing support. Though primary relationships generally include father relationships, the father relationship may become more relevant and supportive when the child is more independent and seeking greater autonomy. If this argument were to be accepted, father support may serve a compensatory role, which would provide support for a multiplicative model of support. However, the finding may also be a result of differences in the range in levels of mother and father support across the population. There may be more variability among the reports of fathers' support, and so when it is there, it matters, as does when it is not. Both these explanations need further examination to

help determine the underlying processes responsible for the significant influence of father support on adolescent outcomes.

Though domain-specific associations were hypothesized for teacher support and adolescent outcomes, the results support broader positive associations with adolescent outcomes. It was assumed that teachers only affect the academic domain because their scope of contact is limited to the school setting and their interactions with adolescents entail instruction. However, the positive associations between teacher support and all the outcomes examined, above and beyond the support of other significant others in the adolescents' life, may demonstrate the protective role teachers play when adolescents do not receive adequate support from other support relationships. In addition, while teachers have consistently been found to provide the lowest level of support, teacher support has been found to enhance and extend parent support effects (Levitt et al., 2005). These findings suggest that schools should do more to foster relationships between teachers and adolescents given the decreasing opportunities for adolescents to forge relationships with teachers as they get older.

Also interesting was the largely positive effect of peer influences on adolescence outcomes. Though research examining the peer relationships and adolescent outcomes has focused primarily on negative peer influences and behaviors (Jaccard, Blanton, & Dodge, 2005), the results of this study challenge the assumption that peer influences are largely negative. Results indicate a largely protective effect of having support from peers. This is not surprising given the increasing meaningfulness of peer relationships in adolescence and confirms prior positive associations found among depression, self-esteem and perceived social support (Colarossi & Eccles, 2003). Research has also indicated the tenuous nature of the positive effect of peer support on adolescent outcomes; adolescents with more social support from peers than

adults have been found to have higher levels and rates of growth of behavior problems (DuBois et al., 2002). It is possible that the balance between the level of support received from adults vs. peers may account for the significant positive links identified in this study.

Also noteworthy was the contradicting result of the negative bivariate associations between peer support and delinquency, and the positive association between peer support and delinquent behavior, when all types of support are included together. This suggests that the positive aspects of peer support are already being captured in the other three kinds of support examined and that what is left unique to peer support is support for at risk behaviors. This would provide support for prior research indicating that peer support is indicative of peer orientation, which is associated with negative behavior. This finding also highlights the importance of examining multiple forms of support both concurrently and consecutively as they may operate differently when examined together.

When potential moderation was explored, the interaction model fit was poor. Given the better fit of the direct effects model, the poor fit of the interaction model could indicate that the perceived support effects are additive rather than multiplicative. The additive model assumes joint influence of each support relationship, indicating the influence of each support relationship is independent of that of another support relationship. Further, the poor fit of the interaction model, may also indicate that the relations between the support relationships and psychosocial outcomes examined follow the theoretical principle of equifinality (Cicchetti & Rogosch, 1996). Variations in support relationships would seem to be predictive of the same psychosocial outcomes. However, the poorly fitting interaction model may be the result of testing too many interactions at the same time. Future extensions of this research may apply an incremental model; examining one interaction at a time may simplify the model and prove more fruitful in

identifying interaction effects. In light of the significant positive influence of father support and prior arguments that peer support is indicative of peer orientation, it would be helpful for future work to specifically examine whether peer support is moderated by changes in the level of adult support and if father support moderates the influence of other support relationships.

When multi-group age differences were explored the number of predictive associations between support relationships and adolescent outcomes decreased sharply over time. This may be attributed to the generally held belief that adolescents' reliance on adult support relationships decline as they get older. Researchers have attributed this shift to the changing contexts adolescents experience, namely, larger schools and classrooms, and less time to develop intimacy with teachers (Wang & Holcombe, 2010). However, the results from this study indicate that these changes are likely to occur in later adolescence, even emerging adulthood, and that there is a reduction in reliance on all support relationships. Though the differences in associations among perceived social support and psychosocial outcomes at various periods of adolescence may be due to the shift in types of experiences, these shifts may not operate as previously suggested. During middle adolescence, the wider range of friends and exposure to more adults during this period may account for a surge in support relationships. On the other hand, transitioning away from home to university or work, during late adolescence, may see a decrease in support relationships as there is greater distance and/or time from friends and family. In addition, older adolescents may be more focused on intimate relationships during later adulthood and this may also contribute to the decrease seen. Another explanation is that as adolescents age, adults may decrease the amount of monitoring and interaction in an effort to grant the independence associated with adulthood. The general decline in the significant associations of all support relationships is particularly interesting given the longstanding

assumption that older adolescents are more influenced by their peers than the significant adults in their lives. Given the evidence of fewer significant associations during late adolescence, future studies comparing perceived support from intimate relationships, peers and other significant adults would provide insight as to the function of various support relationships in late adolescence and emerging adulthood.

The results of this study would indicate that though sphere of influence expand during adolescence, proximal relationships still matter. The influence of perceived father support highlights the importance of investigating the processes at play within a particular context. Some researchers even argue that it is the processes within the various contexts that are responsible for the change (Cook et al, 2002). Pairing this framework with Bronfenbrenner's (1989) ecological model would suggest that the microsystem drives the creation and understanding of the extended environmental contexts. That is to say, certain processes occur to greater or lesser degree in single parent families, smaller classrooms and poorer neighborhoods. According to Cook and colleagues (2002), the microsystem differences are responsible for any contextual differences identified.

Given prior research examining the dyadic nature of parent-child relationships, this study sought to examine the effect of adolescent psychosocial outcomes on the perceived support they receive. Adolescents' psychosocial functioning was found to be predictive of various sources of perceived support. It seems that the characteristics of the adolescents relate to their levels of perceived social support. Adolescents who experience depressive symptoms are likely to report lower levels of perceived support. Though this may be a function of the adolescent's altered perception associated with depression rather than the support actually received, the effect is very real. Similarly, adolescents with more positive behaviors may elicit more support from others.

This dyadic relationship would put high risk adolescents at a further disadvantage, in that, those who need the support most are the least likely to receive it. Efforts should be made to develop interventions that circumvent this, and directs support to those who need it the most.

Limitations

This study has a number of limitations. First, the reliance on an existing measurement of social support prevented the use of an established measure of perceived support. It also prevented the use of the same items to measure all four sources of support. Instead, the support measures queried different scopes of support—the mother and father measures asked specifically about mother or father, while the teacher and peer measures asked about a group of people. Future research should similar measures of specific relationships, such as about a specific teacher and about a best friend. For a more equivalent measure, this study could have used only the "they care about me" item, which is similar across the four types of support examined. However, using a single item measure, when more conceptually valid items were available, would have decreased the efficacy of those measures.

However, given these limitations, the ability to identify such consistent relationships highlights the important and strength of the relationship between the constructs examined. Also, given the growing importance of romantic relationships during adolescence, the absence of a measure of support from a romantic partner is major limitation. Though romantic partners during early adolescence may not be as meaningful or influential, they definitely increase in importance as adolescents age, and may account for the drop off of other support relationships in late adolescence. Despite the absence of a measure of romantic partner support, a major strength of this study was the examination of social support throughout adolescence with both father and mother, and across time. Examining multiple support relationships with various outcomes within

and across time provided a nuanced picture of adolescents' social support networks. Finally, this study examined one aspect of support, emotional, which may not capture the changes in dependence as instrumental or practical support may. It should be noted however that perceived social support/emotional support has been found to be the most predictive of outcomes, and therefore the most suited to examination.

Implications for Future Research

Future research should continue to examine the protective role of parents, especially fathers, as significant associations were found even into late adolescence. How the potential influence of father support differs when fathers are in the home versus out the home, and how parents' relationship quality might affect fathers' support, should be examined. It is likely that these factors are linked to the child's perceived support from father. The continued influence of parental support, especially from fathers, also highlights the importance of interventions encouraging the maintenance of paternal relationships. Future studies also need to explore what factors contribute to the effect of mother support on adolescent outcomes. Factors such as household income, family composition, and parent education would provide valuable insight into how and when these associations vary.

Though the influence of mother, father, teacher, and peer support may vary by age and gender, neighborhood and school quality are considered to be fairly stable throughout adolescence (Eccles & Roeser, 2003). Neighborhood quality has been associated with the quality of parenting and peer associations (Cantillion, 2006; Zimmerman & Messner, 2011). Parents are more likely to be punitive and less supportive in neighborhoods characterized by high crime and social disorganization and these characteristics negatively affect adolescent outcomes (Cantillion, 2006). In addition, adolescents in poor quality neighborhoods are more likely to

associate with delinquent peers (Zimmerman & Messner, 2011). As such, peer support in low quality neighborhoods may be associated with poorer psychosocial outcomes. Similarly, schools characterized by safety and higher achievement may expose adolescents to more positive peer influence. Further, safe schools are associated with better teacher-student relationships and better adolescent outcomes (Crosnoe, Johnson, & Elder, 2004). Therefore, examination of contextual factors such as school climate, teacher qualification and peer group type would help to increase understanding and explain some of the inconsistency in the literature, as well as, inform prevention and intervention efforts.

Taken together, the results of this study indicate that research should continue to examine the potential influence of parents' and other significant support relationships throughout adolescence. Adolescents still depend on support from adult sources, as well as from peers, as they adjust to their growing independence and autonomy. Examining independent and interactive effects of multiple support relationships using longitudinal data provides nuanced understanding that can help to guide interventions.

Table 1. *Demographic Characteristics of Sample Used*

Variable	***N***	***%***	***M***	***SD***
Female	6,118	53		
Age			15.78	1.58
Race/ethnicity				
White	7,585	67		
African-American	1,698	15		
Hispanic	1,359	12		
Other Race[a]	566	5		
Family Status				
Two Parent	6,581	57		
Single Parent	1,963	17		
Other Family	2,309	20		
Parent Education	10,176		5.53	2.39

Note: [a] Asian, Native American, or biracial

Table 2. *Means & Standard Deviations for Variable of Interest*

		Wave 1			Wave 2			Wave 3		
	Range	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Mother Support	1-5	10970	4.44	0.62	10747	4.37	0.64			
Father Support	1-5	8335	4.26	0.75	8368	4.15	0.75	-	-	-
Teacher Support	1-5	11545	4.16	0.60	11123	3.77	0.74	-	-	-
Friend Support	1-5	11545	4.26	0.78	11490	4.33	0.80	-	-	-
Self-Esteem	1-5	11517	4.07	0.64	11521	4.15	0.63	11529	4.22	0.58
Academic Achievement	1-4	9090	2.83	0.74	7350	2.80	0.78	11536	13.13	1.91
Delinquent Behavior	1-4	11430	1.29	0.35	11453	1.12	0.27	11299	1.07	0.15
Depressive Symptoms	1-4	11500	1.59	0.40	11505	1.53	0.40	11470	1.66	0.38

Note. The measure used to determine Academic Achievement at Wave 3 was different from that used at Wave 1 and Wave 2.

Table 3.*Correlations among Study Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1Mother Support W1																			
2Mother Support W2	.59*																		
3 Father Support W1	.49*	.32*																	
4Father Support W2	.35*	.48*	.67*																
5Teacher Support W1	.31*	.23*	.32*	.26*															
6Teacher Support W2	.16*	.22*	.23*	.26*	.49*														
7Peer Support W1	.16*	.10*	.17*	.11*	.16*	.14*													
8Peer Support W2	.10*	.13*	.10	.14*	.11*	.18*	.38*												
9Self-Esteem W1	.42*	.29*	.40*	.29*	.26*	.20*	.15*	.09*											
10Self-Esteem W2	.30*	.38*	.28*	.36*	.20*	.25*	.12*	.11*	.56*										
11Self-Esteem W3	.16*	.16*	.14*	.16*	.10*	.13*	.08*	.15*	.30*	.32*									
12Academic Achievement W1	.10*	.07*	.15*	.14*	.28*	.24*	.14*	.13*	.15*	.11*	.08*								
13Academic Achievement W2	.10*	.09*	.15*	.16*	.23*	.28*	.16*	.17*	.15*	.17*	.07*	.70*							
14Academic Achievement W3	.02	.02*	.04*	..06	.14*	.17*	.10*	.13	.06	.07	.08*	.41*	.40						
15Depression Symptoms W1	-.34*	-.23*	-.34*	-.28*	-.35*	-.23*	-.18*	-.34*	-.49*	-.34*	-.21*	-.26*	-.25*	-.15					
16Depression Symptoms W2	-.26*	-.30*	-.29*	-.33*	-.26*	-.30*	-.13*	-.45*	-.37*	-.45*	-.22*	-.24*	-.27*	.-.16*	.60				
17Depression Symptoms W3	-.15*	-.12*	-.16*	-.18*	-.15*	-.12*	-.05*	-.19*	-.19*	-.19*	-.36*	-.13*	-.13*	.-.13*	.35*	.37*			
18Delinquent Behaviors W1	-.24*	-.19*	-.24*	-.23	-.36*	-.32*	-.09*	-.15*	-.19*	-.15*	-.07*	-.21*	-.23*	-.12*	.28*	.20*	.10*		
19Delinquent Behaviors W2	-.15*	-.22*	-.14	-.19*	-.23*	-.31	-.02*	-.17*	-.13*	-.16*	-.08*	-.10*	-.17*	-.06*	.15*	.20*	.11*	.52*	
20Delinquent Behaviors W3	-.03	-.04*	.01*	-.03*	-.12*	-.15*	-.05*	.00	-.04*	.01*	-.08*	-.07*	-.10*	-.04	.01*.	.01*	.07*	.22*	.23* .

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4. *Unstandardized and Standardized Coefficient Estimates for Associations Among Perceived Support Relationships and Adolescent Outcomes Wave 1*

	Model 1											
	Self Esteem			Academic Achievement			Delinquent Behavior			Depressive Symptoms		
	β	*B*	*(SE)*	*β*	*B*	*(SE)*	*β*	*B*	*(SE)*	*β*	*B*	*(SE)*
Mother Support	.25	.26	.02***	-.01	-.01	.02	-.10	-.05	.01***	-.16	-.10	.01***
Father Support	.21	.18	.02***	.06	.06	.02***	-.12	-.01	.01***	-.14	-.07	.01***
Teacher Support	.11	.11	.01***	.23	.27	.02***	-.29	-.15	.01***	-.23	-.14	.01***
Peer Support	.10	.08	.01***	.02	.02	.01	.02	.01	.01	-.09	-.04	.01***
Covariates												
Female	-.16	-.21	.02***	.13	.19	.02***	-.14	-.09	.01***	.12	.09	.01***
Age	-.01	-.01	.01	-.07	-.03	.01***	-.03	-.00	.00	.10	.02	.00***
African American	.10	.18	.02***	-.12	-.23	.04***	.02	.01	.01	.05	.05	.02**
Other Race	.01	.05	.06	-.03	-.17	.08**	.03	.07	.05	.02	.05	.05
Non-Hispanic	-.02	-.04	.03	-.06	-.14	.05***	.04	.04	.02**	.04	.02	.02**
Single Parent	-.02	-.03	.02	-.09	-.16	.03***	.06	.05	.01***	.04	.04	.01**
Other Family	-.01	-.04	.04	-.03	-.10	.06	.00	.00	.03	.02	.04	.03
Parent Education	.03	.01	.00+	.21	.07	.01***	.03	.00	.00	-.11	-.02	.00***
West	-.02	-.04	.03	-.03	-.07	.05	.08	.06	.02***	.03	.03	.02
Midwest	.01	.01	.02	-.01	-.01	.04	.09	.08	.01***	-.02	-.01	.01
Northeast	-.03	-.06	.03*	-.01	-.07	.06	.08	.08	.02***	.00	.00	.02
Small School	.03	.05	.03	-.03	-.06	.05	-.03	-.03	.01*	-.00	-.02	.02
Large School	.03	.04	.02	-.01	-.02	.04	.03	.02	.01*	-.02	-.02	.01
Urban School	.02	.03	.02	.02	.03	.04	.01	.01	.01	-.02	-.02	.01
Rural School	-.02	-.04	.03	-.01	-.02	.04	.00	.00	.01	.02	.02	.02
Private/Public	-.01	-.02	.03	.05	.14	.06**	.02	.02	.02	-.00	-.00	.02
Class Size	.02	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
R^2		.28			.19			.19			.26	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5. *Unstandardized and Standardized Coefficient Estimates for Associations Among Perceived Support Relationships and Adolescent Outcomes Wave 2*

	Model 1											
	Self Esteem			Academic Achievement			Delinquent Behavior			Depressive Symptoms		
	β	*B*	*(SE)*	*β*	*B*	*(SE)*	*β*	*B*	*(SE)*	*β*	*B*	*(SE)*
Mother Support	.25	.25	.02***	.01	.01	.03	-.13	-.06	.01***	-.15	-.10	.01***
Father Support	.20	.17	.02***	.07	.07	.07***	-.08	-.03	.01**	-.17	-.09	.01***
Teacher Support	.13	.11	.01***	.23	.23	.02***	-.27	-.10	.01***	-.22	-.11	.01***
Peer Support	.04	.03	.01**	.02	.01	.01	.07	.02	.01***	-.07	-.04	.01***
Covariates												
Female	-.21	-.21	.02***	.16	.23	.03***	-.07	-.04	.01***	.10	.08	.01***
Age	-.01	-.01	.01	-.03	-.01	.01	-.07	-.01	.00	.12	.03	.00***
African American	.18	.18	.02***	-.16	-.31	.04***	.00	.00	.01	.07	.07	.02***
Other Race	.05	.05	.06	-.03	-.20	.13	.01	.03	.04	.01	.05	.04
Non-Hispanic	-.04	-.04	.03	-.07	-.17	.05***	.04	.04	.01**	.04	.04	.02**
Single Parent	-.03	-.03	.02	-.07	-.12	.03***	.03	.02	.01*	.04	.04	.01**
Other Family	-.04	-.04	.04	-.02	-.08	.07	-.01	-.01	.02	.03	.06	.03
Parent Education	.01	.01	.00+	.18	.06	.01***	.04	.00	.00**	-.09	-.02	.00***
West	-.04	-.04	.03	-.03	-.06	.05	.06	.05	.01***	.10	.01	.02
Midwest	.01	.01	.02	-.02	-.03	.05	.07	.04	.01***	-.03	-.03	.01*
Northeast	-.06	-.06	.03*	.00	.00	.06	.09	.07	.01***	-.02	-.02	.02
Small School	.05	.05	.03	-.03	-.03	.05	-.02	-.02	.01	.01	.01	.02
Large School	.04	.04	.02+	-.02	-.02	.07	-.02	-.01	.01	-.03	-.03	.01*
Urban School	.03	.03	.02	-.01	-.01	.05	.01	.01	.01	-.01	-.01	.01
Rural School	-.04	-.04	.03	.01	.02	.07	-.01	-.01	.01	-.01	.01	.01
Private/Public	-.02	-.02	.03	.04	.12	.06**	.03	.03	.02	-.01	-.02	.02
Class Size	.00	.00	.00	.02	.00	.00	-.02	.00	.00	.01	.00	.00
R^2		.21			.19			.15			.23	

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. *Significant Unstandardized and Standardized Coefficient Estimates for Associations Among Perceived Support Relationships and Adolescent Outcomes Across Time, Cross-lagged*

	B	*(SE)*	*β*
Direct paths, W_1 Support → W_2 Outcome			
Mother → Self-esteem	.05	.01***	.05
Father → Self-esteem	.03	.01*	.04
Teacher → Self-esteem	.05	.01**	.05
Peer → Self-esteem	.03	.01**	.04
Father → Academic Achievement	.04	.02*	.04
Teacher → Academic Achievement	.04	.02*	.03
Peer → Academic Achievement	.03	.01*	.03
Father → Depressive Symptoms	-.04	.01***	-.07
Teacher → Depressive Symptoms	-.05	.01**	-.05
Peer → Delinquent Behavior	.01	.02***	.03
Bidirectional paths, $Wave_1$ → $Wave_2$			
Self esteem → Mother Support	.04	.02*	.04
Delinquent Behavior → Mother Support	-.10	.03***	-.06
Depressive Symptoms → Father Support	-.07	.03**	-.04
Delinquent Behavior → Father Support	-13	.03***	-.06
Self-esteem → Teacher Support	.06	.02**	.05
Academic Achievement → Teacher Support	.10	.02***	.10
Delinquent Behavior → Teacher Support	.32	.03***	-.15
Self-esteem → Peer Support	.03	.02	.03
Depressive Symptoms → Peer Support	-14	.03***	-.07
Direct paths, W_2 Support → W_3 Outcome			
Father → Self-esteem	.03	.02*	.04
Teacher → Self-esteem	.03	.01*	.04
Teacher → Academic	.13	.04**	.05
Peer → Academic Achievement	.08	.03**	.35
Father → Depressive Symptoms	-.03	.01**	-.07
Teacher → Delinquent Behavior	-.02	.00***	-.08
Peer → Academic Achievement	.08	.03**	.35

Model fit: CFI = .945, RMSEA = .029, SRMR = .073, x^2 (*df* = 179)=1484.28

Note: All variables in the table above were regressed on the covariates: age, race/ethnicity, gender, parent education, family structure, region, urbanicity, school type, and class size.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7. *Chi Square Comparison of Cross-lagged Model by Age*

	X^2	*df*	ΔX^2	Δ *df*
Unconstrained	1959.78	477	822.07	228
Constrained	2781.85	705		
p <.001				

Table 8. *Chi Square Comparison of Cross-lagged Model by Gender*

	X^2	*df*	ΔX^2	Δ *df*
Unconstrained	1939.63	320	2022.14	108
Constrained	3961.77	428		
p <.001				

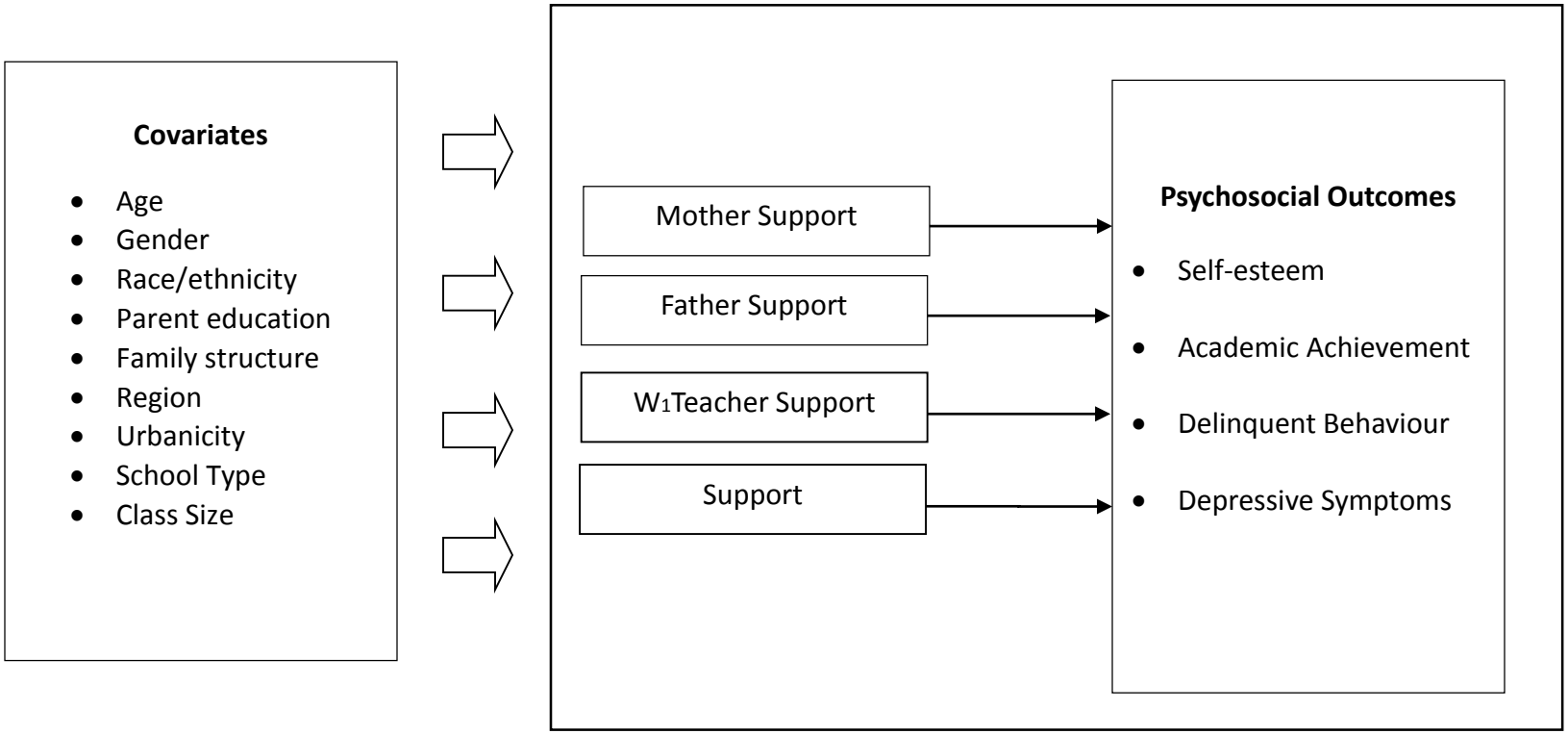

Figure 1. Hypothesized within time model of adolescent and young adult psychosocial outcomes regressed on support relationships.

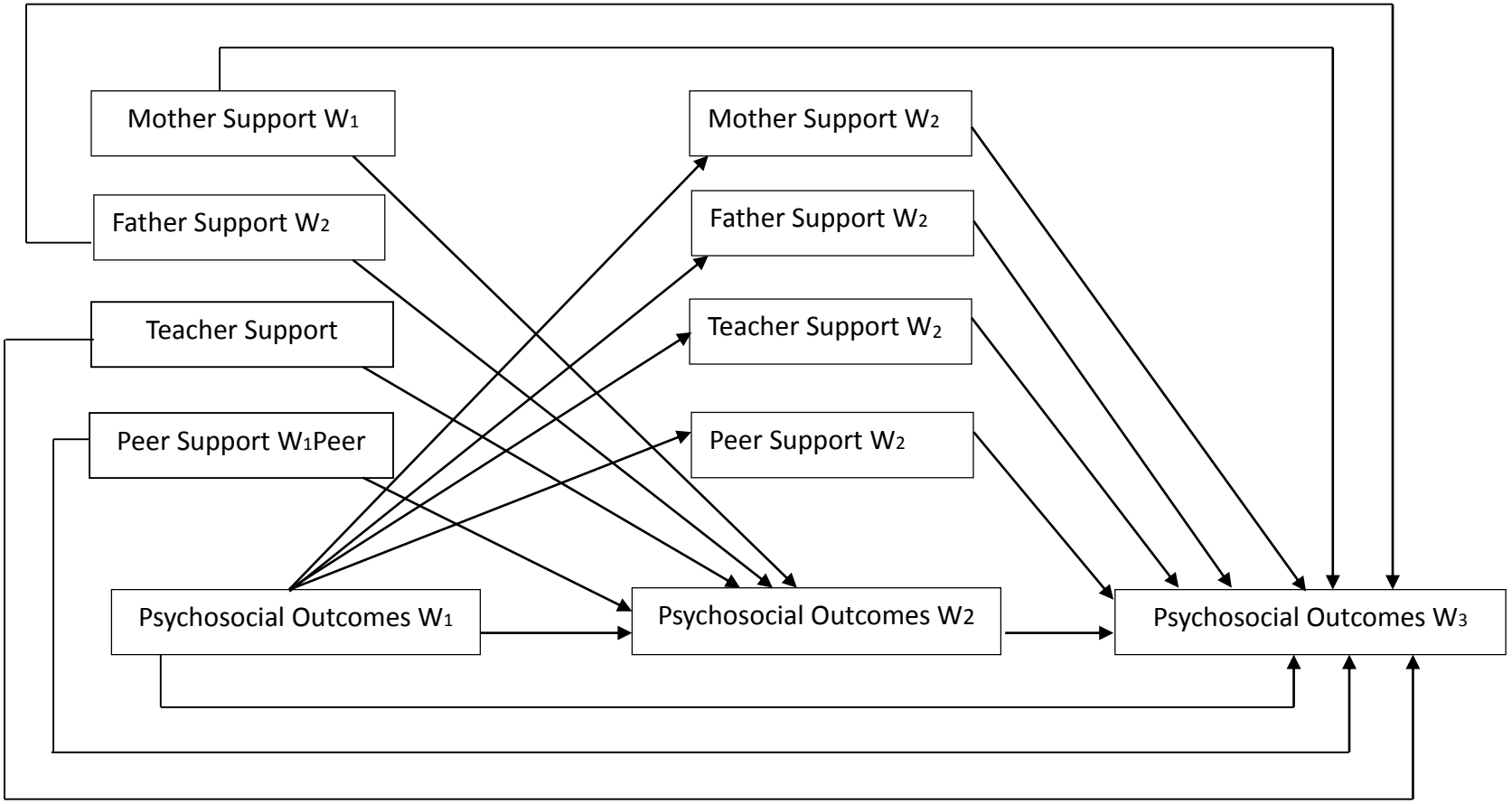

Figure 2. Hypothesized longitudinal model of adolescent and young adult psychosocial outcomes regressed on support relationships. *Note*: Though not displayed in the figure, within wave mother, father, teacher, and peer support are intercorrelated.

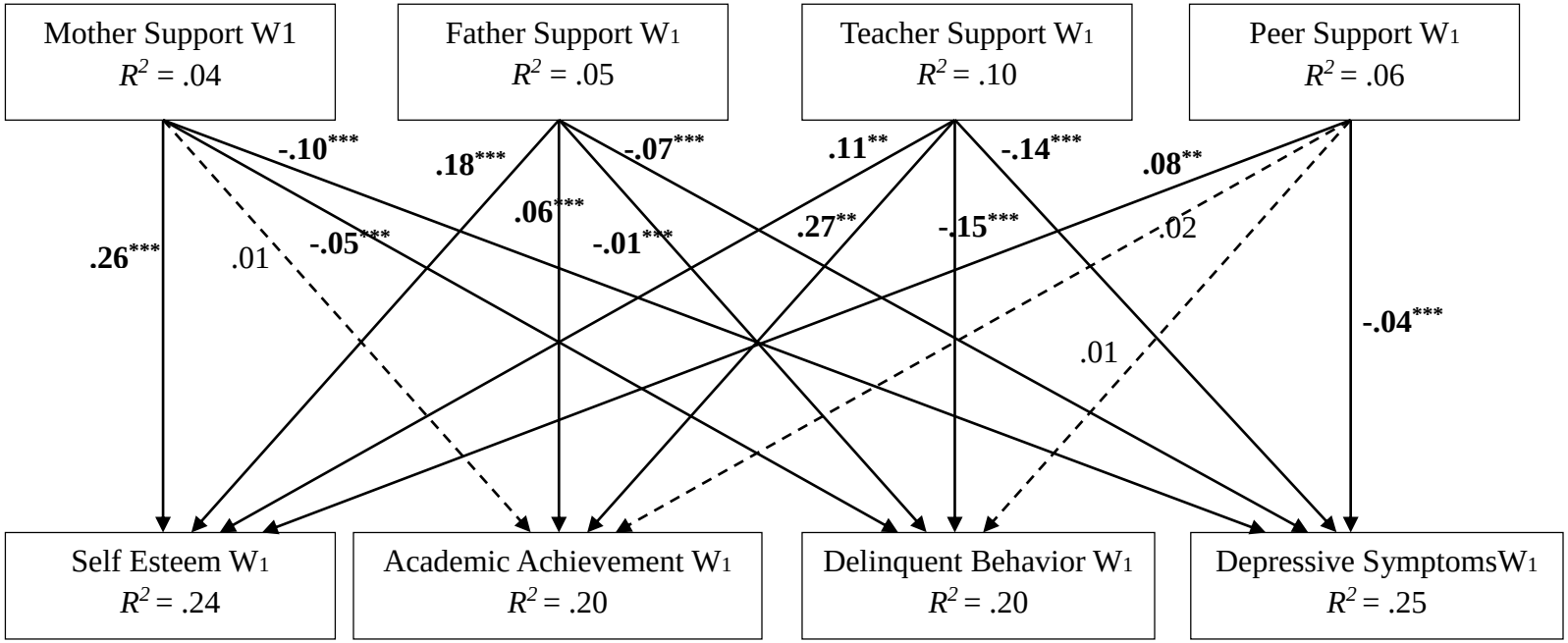

Figure 3. Observed model of Wave 1 mother, father, teacher, and peer support for adolescents' self-esteem, academic achievement, delinquent behavior, and depressive. Standardized direct path coefficients are shown.
*Not*e: All variables in the figure above were regressed on the covariates: age, race/ethnicity, gender, parent education, family status, region, urbanicity, school type, and class size. * $p < .05$, ** $p < .01$, *** $p < .001$.

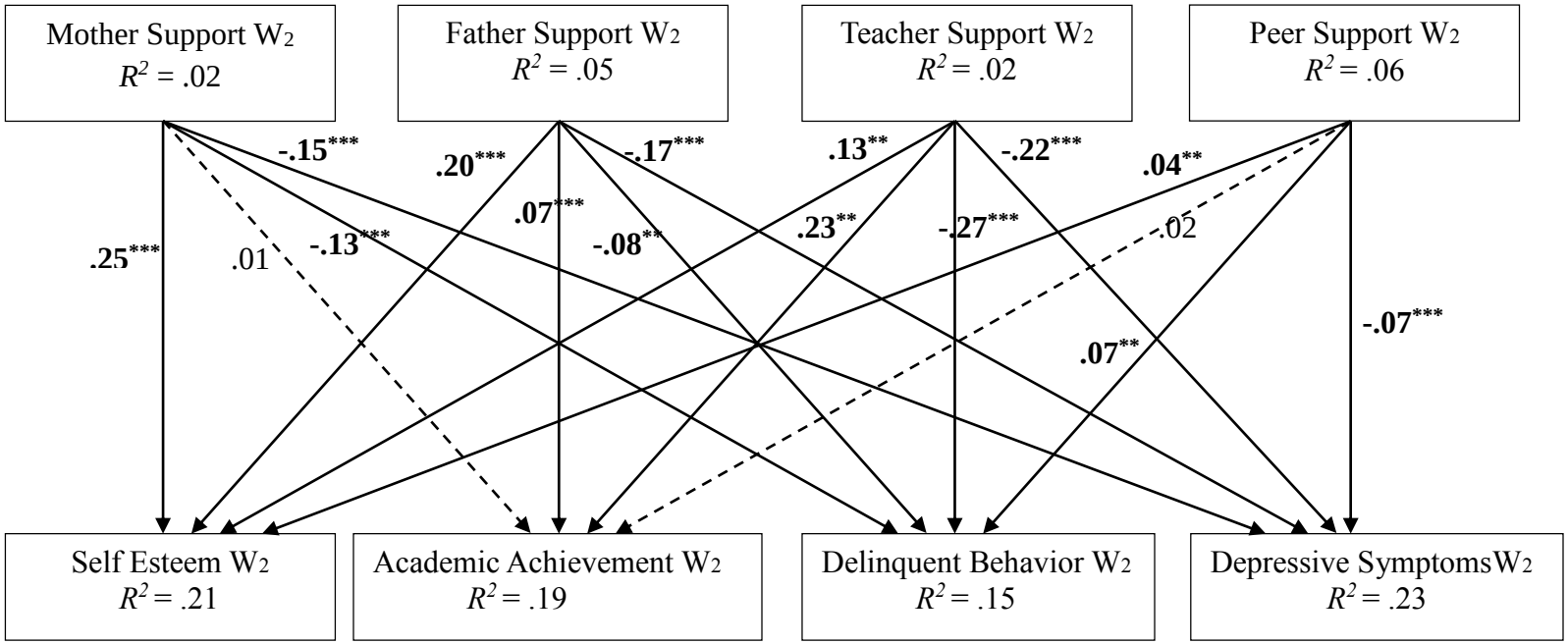

Figure 4. Observed model of Wave 2 mother, father, teacher, and peer support for adolescents' self-esteem, academic achievement, delinquent behavior, and depressive. Standardized direct path coefficients are shown.
*Not*e: All variables in the figure above were regressed on the covariates: age, race/ethnicity, gender, parent education, family status, region, urbanicity, school type, and class size. * $p < .05$, ** $p < .01$, *** $p < .001$.

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